SEQUENCE LISTING

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<110> Cell Signaling Technology, Inc.
     COMB, Michael J.
ZHANG, Hui
     TAN, Yi
<120> PRODUCTION OF MOTIF-SPECIFIC AND CONTEXT-INDEPENDENT ANTIBODIES USING PEPTIDE LIBRARIES AS AN
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<130> CST-138 CIP2
<150> US 09/148,712
<151> 1998-09-04
<150> US 09/535.364
<151> 2000-03-24
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CO
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     <223>
[I]
           ds except cysteine
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<223> Xaa at positions 1-4, 6, and 8-13 = any one of the 20 amino acid
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     <223>
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      <223> Xaa at position 11 is arginine or lysine
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            (6)^{-}...(6)
     <223> PHOSPHORYLATION; serine at position 6 is phosphorylated
Цij
ļ.
     <400> 48
     Arg Gln Arg Ser Thr Ser Thr Pro
     <210> 49
     <211> 8
     <212>
            PRT
     <213> Homo sapiens
     <220>
     <221>
<222>
            MOD RES
            (6)^{-}...(6)
            PHOSPHORYLATION; threonine at position 6 is phosphorylated
     <400> 49
     Lys Gly Arg Thr Trp Thr Leu Cys
```

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5
     1
            50
     <210>
     <211>
            8
     <212>
            PRT
     <213>
            Homo sapiens
     <220>
     <221>
            MOD_RES
     <222>
            (6)^{-}..(6)
            PHOSPHORYLATION; serine at position 6 is phosphorylated
     <223>
     <400> 50
     Arg Pro Arg Thr Thr Ser Phe Ala
     <210> 51
     <211> 8
     <212>
<213>
            PRT
            Homo sapiens
     <220>
ļ.
     <221>
<222>
<223>
            MOD RES
[]
            (6)^{-}. (6)
Ē,
            PHOSPHORYLATION; serine at position 6 is phosphorylated
Ļ.L
<400> 51
Ė
     Arg Arg Arg Thr Ser Ser Phe Ala 5
Lf
ļ.:
     <210> 52
<211> 8
<212> PRT
ļ.
     <213>
            Homo sapiens
L.J
Ľ,
     <220>
<221>
<222>
            MOD_RES
(6)..(6)
<u>|</u>
            PHOSPHORYLATION; serine at position 6 is phosphorylated
     <400> 52
     <210> 53
     <211>
     <212> PRT
     <213>
            Homo sapiens
     <220>
<221> MOD_RES
     <222> (6)..(6)
     <223> PHOSPHORYLATION; serine at position 6 is phosphorylated
                                                       Page 18
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```
<400> 53
     Arg Ile Arg Thr Gln Ser Phe Ser
      <210> 54
      <211> 8
      <212> PRT
      <213> Homo sapiens
      <220>
      <221> MOD_RES <222> (6)..(6)
      <223> PHOSPHORYLATION; threonine at position 6 is phosphorylated
      <400> 54
     <210> 55
L:
      <211> 8
C)
      <212> PRT
[]
      <213> Homo sapiens
ļ.:
      <220>
      <221> MOD RES
      <222> (6)..(6)
Ċ
      <223> PHOSPHORYLATION; threonine at position 6 is phosphorylated
Ļij
      <400> 55
ļ.:
ļ.s
     Lys Asp Arg Gln Gly Thr His Lys 1 \hspace{1cm} 5
Lij
      <210> 56
     <211> 8
<212> PRT
<213> Homo sapiens
ļ.;
      <220>
      <221> MOD_RES <222> (6)..(6
             (6)^{-}...(6)
      <223> PHOSPHORYLATION; threonine at position 6 is phosphorylated
      <400> 56
      \begin{array}{lll} \text{Arg Asp Arg Asn Gly Thr His Leu} \\ 1 & 5 \end{array}
      <210> 57
      <211> 8
      <212> PRT
      <213> Homo sapiens
```

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<220>
     <221>
           MOD_RES
     <222>
           (6)^{-}..(6)
     <223> PHOSPHORYLATION; threonine at position 6 is phosphorylated
     <400> 57
    Lys Leu Arg Leu Ser Thr Asp Tyr 1 \hspace{1cm} 5
     <210> 58
     <211> 8
     <212> PRT
     <213> Homo sapiens
     <220>
     <221> MOD_RES
     <222> (6)..(6)
           PHOSPHORYLATION; threonine at position 6 is phosphorylated
     <400> 58
[]
     <210> 59
     <211> 8
     <212> PRT
     <213> Homo sapiens
Lil
     <220>
E
     <221> MOD RES
ļ.:
     <222> (6)..(6)
ļ.;
     <223> PHOSPHORYLATION; serine at position 6 is phosphorylated
ļ.
Lij
     <400> 59
Arg Leu Arg Lys Ser Ser Ser Tyr
5
     <210> 60
     <211> 8
     <212> PRT
     <213>
           Homo sapiens
     <220>
     <221>
<222>
<223>
           MOD_RES
           (6)..(6)
PHOSPHORYLATION; threonine at position 6 is phosphorylated
     <400> 60
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<210> 61
     <211>
            8
     <212>
            PRT
     <213>
            Homo sapiens
     <220>
     <221>
            MOD RES
     <222>
            (6)^{-}...(6)
     <223>
            PHOSPHORYLATION; serine at position 6 is phosphorylated
     <400> 61
     Arg Arg Ala Ala Ser Met Asp
     <210> 62
     <211>
     <212> PRT
     <213>
            Homo sapiens
     <220>
<221>
<222>
            MOD_RES
(4)..(4)
<223>
            PHOSPHORYLATION; threonine at position 4 is phosphorylated
[]
C)
1:5
     <400> 62
Arg Phe Phe Thr Arg
Lij
     <210> 63
5
     <211>
<212> PRT
ļ.:
     <213> Homo sapiens
ļ.
     <220>
Lij
     <221> MOD_RES
[]
     <222>
            (4)^{-}.(4)
ļ.
            PHOSPHORYLATION; threonine at position 4 is phosphorylated
     <400> 63
     Arg Thr Tyr Thr Leu
     <210> 64
     <211>
     <212> PRT
     <213>
            Homo sapiens
     <220>
     <221>
            MOD RES
     <222>
            (4)^{-}...(4)
      <223> PHOSPHORYLATION; threonine at position 4 is phosphorylated
```

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<400> 64
     Lys Arg Ser Thr Met
      <210> 65
      <211>
              5
      <212> PRT
      <213> Homo sapiens
     <220>
<221> MOD_RES
<222> (4)..(4)
      <223> PHOSPHORYLATION; serine at position 4 is phosphorylated
      <400> 65
     Arg Arg Arg Ser Ser 1 5
      <210> 66
<211> 5
      <212> PRT
ļ.,
      <213>
             Homo sapiens
£.]
Ľ.j
      <220>
<221>
             MOD RES
      <222>
              (4)^{-}. (4)
      <223>
             PHOSPHORYLATION; serine at position 4 is phosphorylated
Į.
      <400> 66
     Arg Arg Pro Ser Tyr 1 5
Ļė
ļ.
ĻĿ
      <210> 67
Lij
     <211> 5
<212> PRT
<213> Homo sapiens
ļ.:
      <220>
      <221> MOD_RES
<222> (4)..(4)
<223> PHOSPHOR
              (4)^{-}.(4)
             PHOSPHORYLATION; threonine at position 4 is phosphorylated
      <400> 67
     Arg Thr Tyr Thr His 1
      <210> 68
      <211> 5
      <212> PRT
      <213> Homo sapiens
      <220>
```

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<221> MOD RES
     <222>
            (4)^{-}.(4)
            PHOSPHORYLATION; serine at position 4 is phosphorylated
     <400> 68
     Arg Ser Pro Ser Met
     <210> 69
     <211>
            5
            PRT
     <212>
     <213> Homo sapiens
     <220>
     <221> MOD_RES
     <222> (4)..(4)
            PHOSPHORYLATION; threonine at position 4 is phosphorylated
     <400> 69
     Arg Lys Arg Thr Val
ļ.i
[]
     <210> 70
į.,
     <211>
            5
<212> PRT
     <213> Homo sapiens
Ľij
     <220>
     <221>
<222>
Lij
            MOD_RES (4)..(4)
₽
     <223>
            PHOSPHORYLATION; threonine at position 4 is phosphorylated
ļ.:
ļ.:
ļ.i
     <400> 70
Lij
     Arg Gln Gly Thr His
ļ.;
     <210> 71
     <211>
     <212> PRT
     <213> Homo sapiens
     <220>
     <221>
            MOD_RES
     <222>
            (4)^{-}..(4)
            PHOSPHORYLATION; threonine at position 4 is phosphorylated
     <400> 71
     Arg Ser Leu Thr Glu
1 5
     <210> 72
```

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<211>
<212>
             5
             PRT
     <213>
             Homo sapiens
     <220>
     <221>
<222>
<223>
             MOD_RES
             (4)^{-}..(4)
             PHOSPHORYLATION; threonine at position 4 is phosphorylated
     <400> 72
     Arg Gln Glu Thr Val
     <210> 73
     <211>
     <212> PRT
     <213> Homo sapiens
     <220>
            MOD_RES
(4)..(4)
     <221>
     <222>
             PHOSPHORYLATION; threonine at position 4 is phosphorylated
ļ-:
<400> 73
ļ:
     Arg Ala Tyr Thr His
£0
     <210> 74
LII
     <211>
     <212> PRT
     <213> Homo sapiens
ļ.i
Fi
     <220>
     <221> MOD_RES
-:
      <222>
            (4)^{-}...(4)
Ĺij
            PHOSPHORYLATION; threonine at position 4 is phosphorylated
     <400> 74
     Lys Arg Asp Thr Phe
      <210> 75
      <211> 5
<212> PRT
      <213>
            Homo sapiens
      <220>
      <221>
             MOD_RES
      <222>
<223>
             (4)^{-}..(4)
             PHOSPHORYLATION; threonine at position 4 is phosphorylated
      <400> 75
```

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Lys Ser Val Thr Asp
1 5
      <210> 76
      <211> 5
     <212> PRT
<213> Homo sapiens
      <220>
      <221> MOD_RES
      <222> (4)..(4)
             PHOSPHORYLATION; serine at position 4 is phosphorylated
      <400> 76
     Arg Lys Ser Ser Ser
1 5
      <210> 77
      <211> 5
      <212> PRT
      <213> Homo sapiens
Ļ
      <220>
<221> MOD_RES <222> (4)..(4
             (4)^{-}..(4)
ļ.
      <223> PHOSPHORYLATION; threonine at position 4 is phosphorylated
<400> 77
     Arg Ser Cys Thr Tyr
Lij
₽
ļ.
ļ.:
      <210> 78
      <211> 5
---
      <212> PRT
Lij
      <213> Homo sapiens
     <220>
<221>
<222>
ļ.i
             MOD_RES
             (3)^{-}.(3)
      <223>
             PHOSPHORYLATION; threonine at position 3 is phosphorylated
      <400> 78
      Phe Phe Thr Arg His
      <210> 79
      <211> 5
<212> PRT
<213> Homo sapiens
      <220>
      <221> MOD_RES
      <222> (3)..(3)
```

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<223> PHOSPHORYLATION; threonine at position 3 is phosphorylated
<400> 79
Thr Trp Thr Leu Cys 1 - 5
<210> 80
<211> 5
       PRT
<212>
<213>
       Homo sapiens
<220>
<221>
       MOD_RES
<222>
      (3)^{-}.(3)
<223>
      PHOSPHORYLATION; serine at position 3 is phosphorylated
<400> 80
Gln Arg Ser Phe Val
<210> 81
<211> 5
<212> PRT
<213>
       Homo sapiens
<220>
<221>
       MOD RES
<222>
<223>
      (3)..(3) PHOSPHORYLATION; serine at position 3 is phosphorylated
<400> 81
Ala Tyr Ser Phe Cys
<210> 82
<211> 5
<212> PRT
<213>
       Homo sapiens
<220>
<221>
<222>
       MOD_RES
       (3)^{-}.(3)
       PHOSPHORYLATION; serine at position 3 is phosphorylated
<400> 82
Gly Tyr Ser Phe Val
<210> 83
<211> 5
<212> PRT
```

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<213> Homo sapiens
     <220>
            MOD_RES
     <221>
     <222> (3)..(3)
<223> PHOSPHORYLATION; serine at position 3 is phosphorylated
     <400> 83
     Thr Thr Ser Phe Ala
     <210> 84
     <211>
     <212> PRT
     <213> Homo sapiens
     <220>
     <221> MOD RES
     <222> (3)..(3)
     <223> PHOSPHORYLATION; serine at position 3 is phosphorylated
     <400> 84
ļ.
[]
     Thr Ser Ser Phe Ala
1:5
<210> 85
     <211> 5
Ċ
     <212> PRT
LII
     <213> Homo sapiens
     <220>
ļ.
     <221> MOD_RES
(3)^{-}. (3)
     <222>
     <223> PHOSPHORYLATION: threonrine at position 3 is phosphorylated
ļ.;
Lij
Ēij
     <400> 85
     Val Tyr Thr His Glu
     <210> 86
     <211> 5
     <212> PRT
     <213> Homo sapiens
     <220>
     <221> MOD_RES
     <222>
           (3)^{-}.(3)
            PHOSPHORYLATION; threonrine at position 3 is phosphorylated
     <400> 86
     Thr Tyr Thr His Glu
```

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<210> 87
      <211>
      <212> PRT
      <213> Homo sapiens
      <220>
      <221>
               MOD RES
      <222>
               (3)^{-}(3)
               PHOSPHORYLATION; threonrine at position 3 is phosphorylated
      <400> 87
      Ala Tyr Thr His Gln
      <210>
               88
      <211> 15
      <212> PRT
      <213> Homo sapiens
      <220>
<221>
               MOD RES
      <222>
               (107...(10)
[]
      <223>
               PHOSPHORYLATION; threonine at position 10 is phosphorylated
Ļń
<220>
      <221>
               MISC_FEATURE
      <222>
               (2)...(15)
               At postions 2-4, 6, 9, and 13-15. X = \text{any amino acid except C} and W: At position 8, X = \text{any amino acid except C} and W and is biased 50% to T; At position 11, X = \text{any amino acid except C} and W and is biased 50% to F; At position 12, X = \text{any amino acid except}
      <223>
Ξ
1
                C and W and is biased 50% to G.
F::
ļ:
      <400> 88
Į.
      Cys Xaa Xaa Xaa Arg Xaa Arg Xaa Xaa Thr Xaa Xaa Xaa Xaa Xaa
      <210>
               89
      <211>
               13
      <212> PRT
      <213>
               Homo sapiens
      <220>
               MOD_RES
      <221>
       <222>
               PHOSPHORYLATION; serine at position 7 is phosphorylated
       <220>
               MISC_FEATURE
       <221>
       <222>
               (2)...(13)
               At postions 2-4, 11-13, X = any amino acid except C, W or Y; A
               t positions 5-6 and 9-10, X = K or R; At position 8, X = F, L.
               or V.
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<400> 89
Cys Xaa Xaa Xaa Xaa Xaa Ser Xaa Xaa Xaa Xaa Xaa
<210> 90
<211> 7
<212> PRT
<213> Homo sapiens
<220>
<221> MOD_RES <222> (5)..(5)
       PHOSPHORYLATION; serine at position 5 is phosphorylated
<220>
<221> MISC_FEATURE
<222> (2)..(6)
<223> At positions 2, 4, and 6, X = any amino acid; At position 3, X = 
<400> 90
Arg Xaa Xaa Xaa Ser Xaa Pro
<210> 91
<211> 14
<212> PRT
<213>
       Homo sapiens
<220>
<221> MOD_RES
<222> (8)..(8)
<223> PHOSPHORYLATION; serine at position 8 is phosphorylated
<220>
<221> MISC_FEATURE <222> (1)..(13)
<223> At postions 1-3, 5, 7, 9, and 11-13, X = any amino acid except c ysteine: At position 6, X = F or Y.
<400> 91
Xaa Xaa Xaa Arg Xaa Xaa Xaa Ser Xaa Pro Xaa Xaa Xaa Cys
<210> 92
<211> 16
<212> PRT
<213> Homo sapiens
<220>
<221> MOD_RES
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<222> (9)..(9)
<223> PHOSPHORYLATION; threonine at position 9 is phosphorylated
<220>
<221> MISC_FEATURE <222> (2)..(16)
      At positions 2-7 and 12-16, X = any amino acid except C; At posi
       tion 11, X = D or E
<400> 92
Cys Xaa Xaa Xaa Xaa Xaa Leu Thr Gln Xaa Xaa Xaa Xaa Xaa
<210> 93
<211> 16
<212> PRT
<213> Homo sapiens
<220>
<221>
<222>
      MOD_RES
       (9)^{-}.(9)
<223>
      PHOSPHORYLATION; serine at position 9 is phosphorylated
<220>
      MISC_FEATURE
<221>
<222>
      (2)..(16)
<223> At positions 2-7 and 12-16, X = any amino acid except C; At posi
       tion 11, X = D or E
<400> 93
Cys Xaa Xaa Xaa Xaa Xaa Xaa Leu Ser Gln Xaa Xaa Xaa Xaa Xaa
<210> 94
<211> 13
<212>
      PRT
<213>
      Homo sapiens
<220>
      MOD_RES
<221>
<222>
       (8)^{-}.(8)
       PHOSPHORYLATION; serine at position 8 is phosphorylated
<220>
<221> MISC_FEATURE <222> (2)..(13)
<223> At positions 2-4, 7, 9, and 11-13, X= any amino acid except C
<400> 94
Cys Xaa Xaa Xaa Arg Ser Xaa Ser Xaa Pro Xaa Xaa Xaa
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<210> 95
<211> 8
<212>
       PRT
<213>
       Homo sapiens
<220>
<221>
       MOD RES
<222>
       (6)^{-}...(6)
<223>
       PHOSPHORYLATION; threonine at position 6 is phosphorylated
<220>
<221> MISC_FEATURE
<222>
      (2)...(8)
<223> At positions 2 and 4-5, X = any amino acid
<400> 95
Phe Xaa Arg Xaa Xaa Thr Phe Phe
<210>
       96
<211>
       17
<212>
       PRT
<213>
       Homo sapiens
<220>
       MOD RES
<221>
<222>
       (10\overline{)}..(10)
<223>
      PHOSPHORYLATION; threonine at position 10 is phosphorylated
<220>
<221> MISC FEATURE
<222>
       (2)...(8)
      At postions 2 and 16-17, X = any amino acid except C and W: At
       positions 3-4, X = any amino acid except C and W and is biased 5
       0% to R; At position 6, X = any amino acid except C and W and is biased 50% to K; At position 8, X = any amino acid except C and W
        and is biased 50% to Q
<220>
<221>
       MISC_FEATURE
<222>
       (9).\overline{.}(17)
<223>
       At postion 9, X = any amino acid except C and W and is biased 50
       % to G; At position 13, X = any amino acid except C and W and i
       s biased 50% to Y; At positions 14-15, X = any amino acid except
       C and W and is biased 50% to F
<400> 96
Cys Xaa Xaa Xaa Phe Xaa Arg Xaa Xaa Thr Phe Phe Xaa Xaa Xaa
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<210> 97
     <211> 6
     <212> PRT
     <213> Homo sapiens
     <220>
            MOD_RES
     <221>
     <222>
            (3)^{-}.(3)
     <223>
            PHOSPHORYLATION; tyrosine at position 3 is phosphorylated
     <220>
<221> MISC FEATURE
<222> (5)...(5)
     <223> At position 5, X = any amino acid
     <400> 97
     Val Ile Tyr Ala Xaa Pro
     <210>
            98
            15
     <211>
ļ.
            PRT
     <212>
     <213>
            Homo sapiens
<220>
     <221>
            MOD RES
     <222>
            (8)..(8)
     <223>
            PHOSPHORYLATION; tyrosine at position 8 is phosphorylated
LII
     <220>
2
     <221> MISC_FEATURE
Ļ
     <222>
            (2).\overline{.}(15)
ļ.
            At postions 2-3, 5, and 13-15, X = any amino acid except C and W
                At positions 4 and 10, X = any amino acid except C and W and
ļ.
             is biased 50% to A; At position 12, X = any amino acid except C a
Lij
            nd W and is biased 50% to F
[]
ļ.
     <400> 98
     Cys Xaa Xaa Xaa Xaa Val Ile Tyr Ala Xaa Pro Xaa Xaa Xaa
     <210> 99
     <211> 9
     <212> PRT
     <213> Homo sapiens
     <220>
     <221>
            MOD RES
     <222>
             (5)^{-}..(5)
             PHOSPHORYLATION; threonine at position 5 is phosphorylated
     <220>
     <221> MISC_FEATURE
```

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<222> (2)..(7)
<223 At positions 2-4 and 7, X = any amino acid
<400> 99
Lys Xaa Xaa Xaa Thr Pro Xaa His Arg
<210> 100
<211> 14
<212> PRT
<213> Homo sapiens
<220>
<221> MOD_RES <222> (8)..(8)
       PHOSPHORYLATION; threonine at position 8 is phosphorylated
<220>
<221> MISC_FEATURE
<222>
       (2)...(14)
       At postions 2-3 and 13-14, X = any amino acid except C and W: A
<223>
        t positions 5-6. X = any amino acid except C and W and is biased 50% to H: At positions 7 and 10. X = any amino acid except C an
        d W and is biased 50% to K
<400> 100
Cys Xaa Xaa Lys Xaa Xaa Xaa Thr Pro Xaa His Arg Xaa Xaa
<210> 101
<211> 14
<212> PRT
<213> Homo sapiens
<220>
<221> MOD RES
<222>
        (8)..(8)
       PHOSPHORYLATION; tyrosine at position 8 is phosphorylated
<220>
<221> MISC_FEATURE
<222>
        (2)...(14)
       At postions 2-4 and 13-14. X = any amino acid except C and W; A
        t positions 5-7, X = any amino acid except C and W and is biase
        d 50% to E and D; At position 10, X = any amino acid except C and W and is biased 50% to M; At position 12, X = any amino acid exc
        ept C and W and is biased 50% to F
<400> 101
Cys Xaa Xaa Xaa Xaa Xaa Xaa Tyr Met Xaa Met Xaa Xaa Xaa 1 \phantom{0}
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<210> 102
     <211> 4
     <212> PRT
     <213> Homo sapiens
     <220>
     <221>
            MOD RES
     <222>
            (1)^{-}..(2)
            PHOSPHORYLATION; tyrosine at position 1 is phosphorylated
     <220>
     <221> MISC_FEATURE <222> (3)..(3)
     <223> At position 3, X = any amino acid
     <400> 102
     Tyr Met Xaa Met
     <210> 103
     <211> 15
     <212> PRT
     <213> Homo sapiens
Ċ)
     <220>
     <221>
<222>
            MOD RES
Į.,
            (9)^{-}..(9)
            PHOSPHORYLATION; tyrosine at position 9 is phosphorylated
Ė
     <220>
ĮI]
     <221> MISC_FEATURE <222> (2)..(15)
Ē
ļ.:
     <223> At postions 2-7, 11, and 13-15, X = any amino acid except C and
1
            W; At position 8, X = any amino acid except C and W and is biased
              50% to E
ļ.
Lij
[]
     <400> 103
ļ.
     Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Tyr Met Xaa Met Xaa Xaa Xaa
     <210> 104
     <211> 6
     <212> PRT
     <213> Homo sapiens
     <220>
     <221> MOD_RES <222> (4)...(4)
             (4)^{-}...(4)
            PHOSPHORYLATION; threonine at position 4 is phosphorylated
     <220>
     <221> MISC_FEATURE
     <222> (3)..(3)
     <223> At position 3, X = any amino acid
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<400> 104
     Arg Gln Xaa Thr Phe Asp
     <210> 105
     <211> 15
     <212> PRT
     <213> Homo sapiens
     <220>
     <221> MOD_RES <222> (8)..(8)
             PHOSPHORYLATION; threonine at position 8 is phosphorylated
     <220>
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     <222> (2)..(15)
     <223> At postions 2-3 and 13-15, X = any amino acid except C and W;
             t position 4. X = any amino acid except C and W and is biased 50
             % to K: At position 7, X = \text{any amino acid except C} and W and is biased 50% to Q: At position 11, X = \text{any amino acid except C} a
j.
             nd W and is biased 50% to L
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     <220>
             MISC_FEATURE
     <221>
     <222>
             (12)..(12)
             At position 12, X = any amino acid except C and W and is biased
     <223>
ĒÜ
             50% to F
ã
     <400> 105
.
ļ.
     Cys Xaa Xaa Xaa Arg Gln Xaa Thr Phe Asp Xaa Xaa Xaa Xaa
ķis
Li
C.)
     <210> 106
     <211> 7
     <212> PRT
     <213>
             Homo sapiens
     <220>
     <221>
<222>
<223>
             MOD RES
             (4)^{-}...(4)
             PHOSPHORYLATION; tyrosine at position 4 is phosphorylated
     <220>
     <221> MISC_FEATURE
     <222> (2)..(2)
     <223> At position 2, X = any amino acid
     <400> 106
     Glu Xaa Ile Tyr Gly Glu Phe
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<210> 107
     <211> 16
     <212> PRT
     <213> Homo sapiens
     <220>
     <221>
            MOD_RES
     <222> (9)..(9)
            PHOSPHORYLATION; tyrosine at position 9 is phosphorylated
     <220> <221> MISC_FEATURE
     <222> (2)..(16)
     <223> At postions 2-4 and 13-16, X = any amino acid except C and W; A
            t positions 5 and 7. X = any amino acid except C and W and is bi
             ased 50% to E
     <400> 107
     Cys Xaa Xaa Xaa Xaa Glu Xaa Ile Tyr Gly Glu Phe Xaa Xaa Xaa Xaa
ļ.
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     <210> 108
[]
     <211> 4
     <212> PRT
Ļċ
     <213> Homo sapiens
<220>
     <221> MOD_RES
<222> (1)..(1)
<223> PHOSPHOR
LII
            PHOSPHORYLATION; serine at position 1 is phosphorylated
Ξ
ļ.,
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     <220>
     <221> MISC_FEATURE <222> (4)..(4)
ļ.i
Į.J
     <223> At position 4, X = K or R
[]
ļ.:
     <400> 108
     Ser Pro Arg Xaa
     <210> 109
     <211> 16
     <212> PRT
     <213> Homo sapiens
     <220>
     <221>
<222>
            MOD_RES
            (9)^{-}...(9)
            PHOSPHORYLATION; serine at position 9 is phosphorylated
     <220>
     <221> MISC_FEATURE
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<222> (2)..(16)
<223>
       At postions 2-4 and 14-16, X = any amino acid except C and W; A
       t positions 5-7. X = any amino acid except C and W and is biased 50% to H; At position B, X = any amino acid except C and W and i
       s biased 50% to K and R; At position 13, X = any amino acid excep
       t C and W and is biased 50% to R
<400> 109
Cys Xaa Xaa Xaa Xaa Xaa Xaa Ser Pro Arg Xaa Xaa Xaa Xaa
<210> 110
<211>
<212>
       PRT
<213> Homo sapiens
<220>
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<222>
       (1)^{-}..(1)
       PHOSPHORYLATION: threonine at position 1 is phosphorylated
<220>
<221>
       MOD_RES
<222>
       (5)^{-}.(5)
<223>
       PHOSPHORYLATION; serine at position 5 is phosphorylated
<220>
<221> MISC_FEATURE
<222> (3)..(4)
<223> At positions 3-4, X = any amino acid
<400> 110
Thr Pro Xaa Xaa Ser Pro
<210>
      111
<211>
<212>
       18
       PRT
<213>
       Homo sapiens
<220>
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       MOD RES
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       (8)^{-}. (8)
       PHOSPHORYLATION; threonine at position 8 is phosphorylated
<220>
       MOD RES
<221>
       (12\overline{)}..(12)
<222>
       PHOSPHORYLATION; serine at position 12 is phosphorylated
<220>
<221> MISC_FEATURE
<222> (2)..(18)
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<223> At postions 2, 4, and 14-18. X = any amino acid except C and W; At position 3, X = any amino acid except C and W and is biased 50% to P and F; At positions 5-6 and 11, X = any amino acid exce
        pt C and W and is biased 50% to P and L: At positions 7 and 10.
         X = any amino acid except C and W and is biased 50% to P
<400> 111
Cys Xaa Xaa Xaa Xaa Xaa Xaa Thr Pro Xaa Xaa Ser Pro Xaa Xaa
Xaa Xaa
<210> 112
<211> 15
<212> PRT
<213> Homo sapiens
<220>
<221> MOD_RES <222> (8)..(8
        (8)^{-}.(8)
        PHOSPHORYLATION; serine at position 8 is phosphorylated
<220>
<221>
<222>
        MISC_FEATURE
        (2)..(15)
<223> At positions 2-6 and 10-15, X = any amino acid except C and W
<400> 112
Cys Xaa Xaa Xaa Xaa Xaa Pro Ser Pro Xaa Xaa Xaa Xaa Xaa Xaa 1 5 10 15
<210> 113
<211> 8
<212> PRT
<213> Homo sapiens
<220>
<221> MOD_RES
<222>
        PHOSPHORYLATION; serine at position 5 is phosphorylated
<400> 113
Lys Arg Arg Ser Ser Lys Asp
1 5
<210> 114
<211> 8
<212> PRT
<213> Homo sapiens
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<220>

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<221> MOD_RES <222> (5)..(5)
               PHOSPHORYLATION; serine at position 5 is phosphorylated
       <400> 114
       Lys Arg Lys Arg Ser Arg Lys Glu 1 \hspace{1cm} 5
       <210> 115
       <211> 8
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       <221> MOD_RES
       <222> (5)..(5)
<223> PHOSPHORYLATION; serine at position 5 is phosphorylated
       <400> 115
       Ser Arg Arg Pro Ser Tyr Arg Lys 5
. |---
 (;)
(;)
       <210> 116
       <211> 8
 ļ.:
       <212> PRT
 <213>
               Homo sapiens
       <220>
               MOD_RES
       <221>
<222>
 U
              (5)^{-}. (5)
 ê
       <223> PHOSPHORYLATION; serine at position 5 is phosphorylated
 ļ.i
 ļ.:
       <400> 116
 ļ.:
 Į.j
       Gly Trp Lys Asn Ser Ile Arg His 1 	 5
       <210> 117
<211> 5
       <212> PRT
       <213> Homo sapiens
       <220>
       <221>
               MOD_RES
       <222>
              (3)^{-}.(3)
               PHOSPHORYLATION; threonine at position 3 is phosphorylated
       <400> 117
       Gly Leu Thr Val Lys
       <210> 118
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<211> 5
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             PRT
      <213>
             Homo sapiens
      <220>
     <221>
<222>
<223>
             MOD_RES
              (3)^{-}(3)
              PHOSPHORYLATION; threonine at position 3 is phosphorylated
      <400> 118
     Leu Ala Thr Val Lys
      <210> 119
      <211> 5
      <212> PRT
<213> Homo sapiens
     <220>
<221> MOD_RES
<222> (3)..(3)
<223> PHOSPHOR
              PHOSPHORYLATION; threonine at position 3 is phosphorylated
ļ.i
Ċ)
      <400> 119
[]
Phe Phe Thr Arg His
      <210> 120
      <211> 5
<212> PRT
LII
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      <213>
              Homo sapiens
ļ.
     <220>
<221> MOD_RES
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ļ.
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[.]
             PHOSPHORYLATION; threonine at position 3 is phosphorylated
ļ.
      <400> 120
      Pro Leu Thr Pro Arg 1 5
      <210> 121
      <211> 5
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             Homo sapiens
      <220>
<221>
<222>
             MOD_RES (3)..(3)
              PHOSPHORYLATION; threonine at position 3 is phosphorylated
      <400> 121
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Asn Val Thr Met Arg
      <210> 122
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      <400> 122
     Ala Val Thr Pro Lys
      <210> 123
      <211> 5
      <212> PRT
      <213> Homo sapiens
ļ.;
      <220>
<221>
<222>
<223>
             MOD RES
             (3)^{-}.(3)
             PHOSPHORYLATION; serine at position 3 is phosphorylated
<400> 123
     Pro Leu Ser Gln Glu
1 5
LIJ
æ
ļ.i
      <210> 124
ļ.
      <211> 5
Į.i
      <212> PRT
Ĺij
      <213> Homo sapiens
[]
     <220>
<221>
<222>
<223>
Ļ.
             MOD_RES
             (3)^{-}.(3)
             PHOSPHORYLATION; serine at position 3 is phosphorylated
      <400> 124
      Tyr Pro Ser Gln Glu
      <210> 125
      <211> 5
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     <400> 125
     Val Ser Thr Gln Glu
                     5
     <210> 126
     <211> 7
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     <221> MOD RES
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     <223> PHOSPHORYLATION; serine at position 5 is phosphorylated
     <400> 126
[]
     Ser Val Thr Gln Ser Gln Gly
ļ.i
<210> 127
Ė
     <211> 5
     <212> PRT
L
     <213>
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ļ.:
     <220>
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ļ.:
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Lij
[]
     <400> 127
ļ.;
     Pro Ile Ser Gln Asn
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PHOSPHORYLATION; serine at position 3 is phosphorylated
     <222>
     <400> 128
     Ser Phe Ser Gln Pro
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1
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     <210> 130
     <211> 5
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            MOD_RES (3)..(3)
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Ľ)
            PHOSPHORYLATION; serine at position 3 is phosphorylated
į.,
<400> 130
     Asp Leu Ser Gln Val
ĮI]
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ļ.:
     <210> 131
1:4
     <211> 5
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     <400> 131
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     <211> 7
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     <213>
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            PHOSPHORYLATION; serine at position 5 is phosphorylated
                                                         Page 43
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     Tyr Arg Ser Pro Ser Met Pro 1 5
     <210> 133
     <211> 7
      <212> PRT
      <213> Homo sapiens
      <220>
     <221> MOD_RES <222> (5)..(5)
      <223> PHOSPHORYLATION; serine at position 5 is phosphorylated
     <400> 133
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1 5
     <210> 134
<211> 7
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      <212> PRT
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Ė
            PHOSPHORYLATION; serine at position 5 is phosphorylated
E
     <400> 134
<u></u>₽.≟
     <u>|</u>
ļ.,
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     <210> 135
<211> 7
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      <220>
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            PHOSPHORYLATION; threonine at position 5 is phosphorylated
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      <210> 136
      <211> 7
      <212> PRT
      <213> Homo sapiens
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            MOD RES
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     Gln Arg Ser Thr Ser Thr Pro
     <210> 137
     <211> 7
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     <400> 137
     Leu Arg Ser Ile Ser Leu Pro 1 \hspace{1cm} 5
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     <211> 6
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Lij
     <220>
2
     <221> MOD_RES <222> (5)..(5)
|
!::
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ļ.:
L
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£',)
     Phe Leu Gly Phe Ser Tyr 5
     <210> 139
     <211> 6
     <212> PRT
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     <220>
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            PHOSPHORYLATION; serine at position 5 is phosphorylated
     <400> 139
     Phe Ser Asn Phe Ser Phe 1 5
```

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<210> 140
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     <400> 140
     Phe Arg Asn Phe Ser Tyr 5
      <210> 141
      <211> 6
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ķ.
             PHOSPHORYLATION; threonine at position 5 is phosphorylated
[j
ļ.i.
     <400> 141
Phe Gln Gly Phe Thr Tyr
Lij
      <210> 142
≘
      <211> 6
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ļ.,
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!::
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            (5)^{-}. (5)
      <223> PHOSPHORYLATION; threonine at position 5 is phosphorylated
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      Phe Leu Gly Phe Thr Tyr 1 \hspace{1cm} 5
      <210> 144
      <211> 6
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U
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      Phe Pro Gln Phe Ser Tyr 5
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